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ABSTRACT

This booklet is part of the "Getting to Grips with..." series, which is intended for the general reader who wants to understand important trends in vocational education and training. It is designed to provide the reader with an understanding of the main practical aspects of on-the-job training. The booklet is in two parts. The first part, a description of the subject matter that should be clear to any interested layperson, covers the following topics: (1) the need for effective on-the-job training in Australia; (2) how to determine training needs; (3) different approaches and methods of on-the-job training; (4) how to deliver on-the-job training; and (5) how to evaluate on-the-job training programs. These topics are illustrated by three case studies taken from a range of Australian enterprises. The second part gives an annotated list of 26 publications for those who want to read further. Each annotation consists of the author or sponsoring organization, publication data, title, publisher, and content summary. (YLB)

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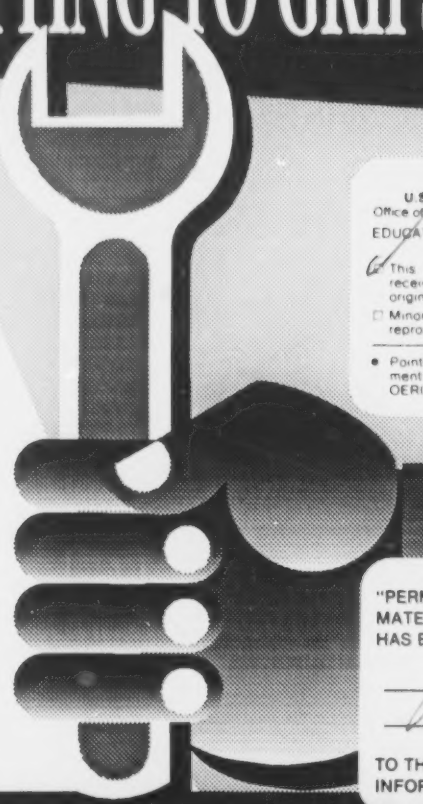

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ON-THE-JOB TRAINING

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GETTING TO GRIPS WITH ON-THE-JOB TRAINING

Terry Clark

This booklet was funded by the Commonwealth Department of Employment, Education and Training.

ABOUT THE SERIES

The "Getting to grips with . . ." series has been written for the general reader who wants to understand important trends in vocational education and training.

Each booklet is in two parts. The first part comprises a description of the subject matter in a manner which is intended to be clear to any interested layperson. The second part gives an annotated list of publications for those who want to read further.

Other titles in the series include: *Getting to grips with skills audits, Getting to grips with competency-based training and assessment, Getting to grips with key technologies* and *Getting to grips with on-the-job competencies.*

The Series Editor is Dr. William Hall, Executive Director, TAFE National Centre for Research and Development. The Series Designer is Bain Middleton. Photographs were provided by Advertiser Newspapers Ltd and News Ltd.

ABOUT THIS BOOKLET

This booklet has been written by Terry Clark who is a lecturer in Adult, Technical Teacher Education and Training at the Northern Territory University. Much help was provided by Geoff Hennessey of Nabalco Pty Ltd., Senior Constable Scott Mitchell of the Northern Territory Police, Pat Leavy of Sheraton Darwin Hotel, Michael Murphy of the Department of Employment, Education and Training, and Bill Hall and Geoff Hayton of the TAFE National Centre for Research and Development.

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INTRODUCTION

This booklet is designed to provide the reader with an understanding of the main practical aspects of on-the-job training.

In Australia's current economic climate, properly delivered on-the-job training is crucial to the improvement of productivity and efficiency in the workplace. If this is to happen, however, many people with no prior experience or formal qualifications in training will need to be involved in the planning, delivery and management of training.

The booklet will cover the following topics:

* the need for effective on-the-job training in Australia
* how to determine training needs
* different approaches and methods of on-the-job training
* how to deliver on-the-job training
* how to evaluate on-the-job training programs.

These will be illustrated by case studies taken from a range of Australian enterprises.

Managers, supervisors and experienced workers who are called on to deliver on-the-job training should find this booklet useful. Although some may already have experience in delivering training programs, the new emphasis on competency-based training in Australian industry is likely to

mean that many will be taking on this role for the first time.

On-the-job training is particularly effective for induction of new employees and for use by supervisors who have a responsibility to assist their subordinates' career development.

WHAT IS ON-THE-JOB TRAINING?

On-the-job training can simply be described as the formation of skills, knowledge and attitudes occurring in the trainee's normal workplace.

This process may range from very structured training with highly predictable outcomes such as in the cockpit of an aeroplane, to very informal acquisition of skills as may happen when a new apprentice is told to spend a few days just watching an experienced tradesperson at work. Between these two extremes lie many levels of on-the-job training. These will differ not only in terms of structure, but also in duration, methodology, cost, effectiveness, efficiency and external recognition. On-the-job training may or may not involve a trainer, training materials or training technology.

The importance of on-the-job training

Although the need for effective on-the-job training in Australia has been advocated by most industrial educators and professional associations for many years, its value has only been widely promoted to industry quite recently. John Dawkins, the Federal Minister for Employment, Education and Training, recognised its importance in his 1988 discussion paper *Industry training in Australia: the need for change*.

In this paper Dawkins expressed concern at the inadequacy of the national training effort in terms of its ability to meet the demands of international competitiveness, structural adjustment and technological change. According to the

Australian Bureau of Statistics and the Bureau of Labour Market Research, as many as one third of Australian enterprises spend nothing on formal training. In addition expenditure between industries varies greatly. It is relatively low in agriculture, retail, construction, recreation and textile, clothing and footwear and high in communications, mining, finance, chemicals and public administration.

International competition

Overseas, on-the-job training is generally more highly valued than in Australia. Northern European countries, Japan and rapidly expanding economies such as Korea, Singapore and Taiwan all invest much more heavily in this area. While the USA does not have such a notable tradition of on-the-job training, certain of its enterprises have a reputation for exemplary practice. For example, IBM, Motorola, Disney, Federal Express and the retailer Nordstrom attribute their success in the market-place to their investment in employee training. According to Bill Wiggenhorn, Director of Training at Motorola:

> *We've documented the savings from the statistical process control methods and problem-solving methods we've trained our people in. We're running a rate of return of about 30 times the dollars invested - which is why we've gotten pretty good support from senior management.*

While the reasons for Australia's lack-lustre international economic performance extend beyond inadequate training, there is wide agreement among business, unions and government that improving the rate of skill formation is

crucial to any sustainable recovery. Put simply by Peter Kirby (1990):

* economic performance depends on higher productivity;

* productivity depends on skills;

* skills will be tested by credentials;

* credentials will be given on reaching a specified level of competence;

* competence is developed through training.

Prescriptions for Australia

In January 1989 the Employment and Skills Formation Council was asked by Minister Dawkins to seek comments on his discussion paper from a wide range of interested parties. Their subsequent report contained a number of significant conclusions which included:

* that industry should contribute at least as much to improving training arrangements as governments;

* that improvements in training are largely dependent on the quality of industries' analyses of their needs;

* that the industrial parties have a pivotal role in implementing competency-based training;

* that most enterprises have yet to integrate training with their human resource strategies and business plans;

* that industry would benefit from a more diverse network of training providers;

* that financial incentives be available to employers who can demonstrate the provision of structured on-the-job training designed to achieve specific outcomes.

These and other findings were used in the formulation of the Training Guarantee legislation which was enacted in 1990. While its opponents portray the Training Guarantee as an unnecessary burden on industry, its main benefit to date has been to focus attention on the need to develop competencies in a more structured manner.

The Federal Government's strategy for the reconstruction of Australian industry hinges on two major policy initiatives: award restructuring and skill formation. In order to regain comparative international advantage, the Government is determined to overcome the interrelated problems of restrictive industrial awards, demarcation, outmoded management practices and inadequate training of the workforce. Its objective in this regard is best summarised in one of the Structural Efficiency Principles handed down by the Industrial Relations Commission in 1988:

> *. . . to establish skill-related career paths which provide an incentive for workers to continue to participate in skill formation . . .*

This objective clearly states the need for workers to undergo training and retraining throughout their careers: quite a daunting proposition for the many Australians who believe that their education and initial vocational training will be

adequate for their entire working lives. What may be less obvious is the need for this training to be delivered to a far greater number of people and in a greater variety of modes than are currently supplied by the traditional providers of training.

Training will play a vital role in industry restructuring in Australia. Hayton (1990) states:

> *. . . training is a medium to long term investment in our workforce - an investment just as important if not more important than investment in equipment.*

It is now widely acknowledged that investment in training, particularly on-the-job training needs to be increased substantially in Australia.

Is training the answer?

This begs the question as to whether adequate training can be provided in time to deliver Australia from the economic doldrums? And a crucial part of the answer would appear to lie in the ability of our enterprises to conduct effective on-the-job training. Our track record in this field can hardly give rise to much optimism.

With the exception of some larger corporations, parts of the public sector and defence and emergency services, Australian enterprises generally do not have a tradition of providing structured on-the-job training for their employees. This deficiency is particularly apparent in small businesses and in the agricultural sectors. Instead, employers have relied on external training providers such as TAFE, the

importation of skills from overseas and the poaching of skilled labour from those enterprises that have invested in training.

In many ways this situation is the result of cultural and historical factors. Until the 1980s Australia's trade balance was sustained by primary products which enjoyed stable prices. Local manufacturers were largely insulated from global competition by tariff protection and import quotas. This lulled many Australian enterprises and workers into a complacency which has been characterised by inefficient production and work practices and little investment in training.

(Advertiser Newspapers)

Declining demand for our primary products and instability in world prices has brought to an end our reliance on the agriculture and resource sectors which in the past kept the economy afloat. Because of lack of competitiveness, however, the manufacturing and service sectors have been unable to assume this role.

There still persists a widespread, false belief that Australia can stage an economic recovery through hard work and belt-tightening. While there may be some historical evidence for this point of view, it is generally recognised that we need to work smarter rather than harder to succeed internationally. If we examine those countries that have overtaken Australia economically, none have done so by reducing wages or living conditions. One consistent characteristic of their success, however, is an emphasis on skill formation within their workforces.

Unfortunately in Australia there exists some reluctance towards a solution which emphasises education and training. There is still a perception that economic success is possible through brawn rather than brain. And so we cut down our academic tall poppies, squeeze our education and research institutions and ignore the need to invest in effective on-the-job training programs.

The myth that we can progress by using yesterday's *ad hoc*, hit-or-miss training techniques must be put to rest swiftly. In the 1990s it is no longer possible to rely on 'training by osmosis' (i.e. sitting next to Bruce or Betty). Nor can we assume that competencies will result by simply sending an employee to a TAFE college, University or on a short course.

Another related problem has been a narrow focus on training delivery. According to Hall (1990) our training institutions and industry alike have tended to concentrate on the 'how, where and when' of training, to the exclusion of equally important considerations such as needs analyses, curriculum development, assessment and accreditation. In addition the skills formation requirements of award restructuring and the move to competency-based instruction demand a more sophisticated approach. Only when all these factors are dealt with in a systematic fashion can training be seen as a truly effective contributor to Australia's economic recovery.

DETERMINING ON-THE-JOB TRAINING NEEDS

To paraphrase the Cheshire cat from *Alice in Wonderland*:

> *If you don't much care where you're going,*
> *then it won't matter which way you go.*

For many enterprises, unfortunately this epitomises their approach to on-the-job training. Too often training is prescribed as a panacea for all sorts of organisational ills. In other words, there is a tendency to assume the need for training without any systematic examination and analysis of the situation.

Examples of these 'shoot from the hip' reactions are:

* if it's a quality problem, then a three day total quality control training for one or two employees should put it right;

* if it's a safety problem, then a two day accident prevention course should do the trick; and

* if our financial planning is awry, then let's enrol the accountant in an MBA program.

At the risk of stating the obvious, training can only be reliably expected to solve problems that relate to deficiencies in human performance in terms of knowledge, skills and attitudes. According to Mager and Pipe (1970), it is essential to establish whether or not the problem is actually a performance deficiency. To do this, a training needs analysis should be carried out.

A Training Needs Analysis (TNA) is the determination of the differences between the actual condition (what is) and the desired condition (what should be) in human performance in terms of knowledge, skills and attitudes. Guthrie (1987)

Manual skills, knowledge skills and attitudinal skills all contribute to human performance. Each skill type often overlaps as described by Hayes (1990) in Figure 1.

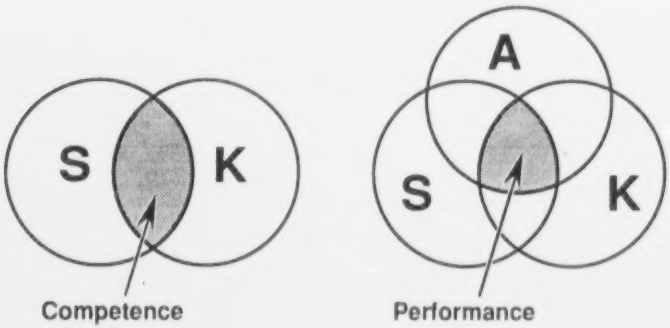

Figure 1: Overlapping of skill types

Where knowledge and skill overlap we have the area of **competency**. This is the condition where the person is **capable** of performing a job or task. However, this does not necessarily mean that the person **will** perform. It is necessary to add the third dimension of attitude to ensure that the job gets done.

When conducting a TNA, competence (i.e. knowledge and skills) are often easier to assess than attitudes. This is because they are usually easier to describe and quantify. In

John Foyster's book in this series, *Getting to grips with competency-based training and assessment* he outlines three components of competence that promote easy assessment:

* a precise, concise statement of the range of skills to be performed;

* the standards of performance such as production rate, error rate and level of quality; and

* the conditions under which performance is required e.g. work environment, time, tools and equipment.

Provided these components are clearly specified, determination of competence should be straightforward. Employees can simply be asked to demonstrate whether they can perform a task or job under normal working conditions.

Attitudes however, are often more difficult to specify in a way that makes their assessment clear cut. For example, how do you determine whether an employee has 'high motivation', 'a courteous telephone manner' or 'a commitment to excellent service?' While it may be possible to **infer** the presence of such attitudes from the employee's overt behaviour or work output, it can be very difficult to actually measure them in isolation. And even if attitudes can be measured, there can be no guarantee that they will be applied with the same consistency as proven competencies.

Nevertheless attitudes are a vital component of performance in the workplace. Indeed, in highly competitive industries (e.g. the service sector) attitudes are often the key determinant of an enterprise's success. So we cannot put

attitudes in the 'too hard basket'. If we are to identify correctly the on-the-job training needs in this area, it is necessary to get to grips with appropriate methods of assessment.

Training needs analyses may be conducted at various levels: industry, occupation, enterprise and sub-enterprise. Their application in this booklet is mainly at the enterprise or sub-enterprise level.

Training needs analyses should not be confused with **occupational analyses** which are concerned with the identification of jobs, duties and tasks. However, it may be necessary to conduct an occupational analysis prior to a TNA if this basic information is not available from job descriptions. Fortunately the techniques for conducting TNAs and occupational analyses are similar.

Training needs analysis methodologies

There are five main types of TNA methods:

* examination of enterprise knowledge and records
* observation
* interview
* questionnaire
* group process.

Even in the briefest TNA, it is likely that at least two of these will need to be employed. This is because basic content for the main method (e.g. questions for an interview) are often derived from another method (e.g. enterprise records). Although there is some overlap between these types, it is

useful to consider each separately. A more complete discussion of TNA methodology can be found in the monograph by Hayton and others (1989) *Training needs analysis.*

- Enterprise knowledge and records

  For most organisations this is an obvious starting place for a TNA. Valuable sources of information about employees' performance and training needs can often be obtained from the following people:

  * workers
  * line supervisors
  * trainers
  * engineers
  * safety officers
  * quality control officers
  * union job delegates.

  Company records may also be a source of information, although not always in formats that immediately reveal training needs. Needs may be directly or indirectly obtained from data such as:

  * daily logs and diaries
  * quality control reports
  * accident/damage reports
  * waste, spoiled work and rework rates
  * machine production and downtime rates
  * job descriptions
  * training records
  * exit interview records.

The Critical Incident Technique, which is a well-developed method for examining significant events in the production process (e.g. accidents, outstanding achievement), may also be used to infer training needs.

The main **advantages** of a training needs analysis using enterprise knowledge and records are:

* the information is accessible
* specific to a given job, process, machine or area
* often quantified
* longer term, historical perspective
* relatively inexpensive.

The main **disadvantages** are:

* expression of opinion rather than fact
* parochial, narrow perspective
* may lack a bipartisan approach
* need to maintain systematic, standardised records.

Enterprise knowledge and records are a fertile source of information about on-the-job training needs. They are likely to become even more useful as computerisation allows for better recording, timely reporting and more sophisticated analyses.

- Observation methods

These can be divided into **formal** and **informal** methods and usually need to be supplemented by other techniques. Traditional types of formal observation include method study and job measurement. Because

these are closely associated with the now discredited concept of 'scientific management' or 'Taylorism', their use has declined in recent times.

Informal observation, however, will almost certainly feature in any analysis of on-the-job training needs whether by accident or by design. By watching a person at work some parameters concerning the task and the individual's ability are rapidly established. While this may not provide hard, definitive data, it does give us a 'feel' for the job and the associated competencies. From these we are sometimes able to infer training needs.

In using any type of observation technique we should remember that the information being gathered is being filtered through the eyes and mind of the observer. This may result in subjectivity and bias. It should also be recognised that if the employee is aware that they are being observed, then their performance could conceivably be affected. Video recording may be a less obtrusive means of observation and can allow for more detailed examination of a worker's performance.

Despite these drawbacks, on-the-job training needs can be readily and inexpensively determined by an astute, experienced observer. Ideally, conclusions reached by this method should be confirmed by another method to ensure reliability and acceptance.

- Interview methods

From the point of view of employees, interviews are

perhaps the most satisfactory of all TNA methods. Whether structured or unstructured, the interview can allow for a confidential, one-to-one discussion of an individual's training needs. The interviewer must have good interpersonal skills in order to explore these needs in a non-directive and non-threatening manner.

Interviews may be used as an alternative to paper-based questionnaires if members of the workforce have limited reading and writing skills. Naturally, if workers do not have a good grasp of spoken English, then the interview should be conducted in the language of the employee.

The **unstructured** interview is often a good starting point if the training needs are largely unknown. By using open-ended questions, providing non-judgemental responses and encouraging disclosure, the interviewer can get quick first-hand information. The main **problems** with unstructured interviews are:

* the generation of opinion rather than fact
* the lack of consistency if applied to a large number of employees, or if more than one interviewer is involved
* interviewer and interviewee may get side-tracked
* often very difficult to code and analyse responses.

The **structured** interview, in which the same previously determined questions are put to all interviewees, should give more consistent results provided that the interviewers are trained to a consistent standard. By limiting the range of responses (e.g. to Yes/No, multiple choice, number or code) the results of a structured

interview should be more consistent and easier to quantify than its unstructured counterpart.

Its main **limitations** are:

* takes longer to prepare
* restricts the range of possible findings
* relatively expensive if large numbers of employees are involved.

Both structured and unstructured interviews are very useful in workplaces where there are industrial relations or interpersonal problems. These issues can be thoroughly discussed in the privacy of the interview setting before turning to the subject of training needs. Because work-related grievances can get in the way of identifying training needs, the initial stage of the interview can be used to deal with these issues.

Case Study 1: Nabalco Pty Ltd.

In 1990 the author conducted a combined training needs analysis and skills audit of 55 electrical, electronic and instrument workers for the alumina producer Nabalco Pty Ltd at Nhulunbuy in the Northern Territory. The training needs of the employees, who included electricians, instrument fitters, technicians, linesmen, cable jointers and trades assistants were determined using a structured questionnaire.

Questions relating to over 500 skill, knowledge and attitude items were developed in consultation with a working party comprising seven representatives of employees and management. Initially the working party was given a general inventory of skills used on the job by electrical and instrument workers. Following two full days of small group discussions together with referral back to their colleagues, the working party developed a draft questionnaire to be used by the interviewers.

Three members of the working party and the author acted as interviewers. The draft questions were trialled using members of the working party resulting in some minor modifications. Each interviewer then interviewed about ten workers. The interviews took between 30 and 90 minutes to complete.

Interviewees were asked to rate each skill/knowledge/attitude item as:

- non-existent
- basic
- better than basic
- advanced
- currently used on the job
- training desired.

The interviewers recorded the above number codes depending upon the answer given. A variety of reports based on these data were then produced.

Examples of reports included:

- frequency of items where training is desired
- items where training is desired from a zero skills base for any employee
- frequency of zero skill/knowledge/attitude
- frequency of advanced skill/knowledge/attitude on the job
- list jobs of employees for a particular training need.

The range of possible reports is vast and the company intends to update the information on an annual basis or as employees join the company or complete training courses. Both the employer and the union plan to use information from the database to develop training plans and career paths. All other Nabalco employees will have the opportunity to participate in similar interviews in 1991.

The success of this TNA was largely attributable to the co-operation between the employer, union and workers. All were involved in the planning, selling, interviewing and reporting phases. As a result, over 90% of all workers participated.

- Questionnaire methods

  Paper-based surveys and questionnaires are the most common form of TNA method. Using this technique, individual employees write or code their answers to specific, pre-set questions about their training needs. In most cases questionnaires are designed to be completed without assistance from the researcher.

  The steps involved in using a questionnaire to determine on-the-job training needs are:

  - selecting the sample to be surveyed
  - developing the questions
  - designing the format of the questionnaire
  - trialling the questionnaire
  - collecting the data
  - processing and analysing the data.

  You may choose to draft your own enterprise-specific questionnaire from scratch, or base it on one of the many existing instruments that have been developed by organisations like Industry Training Councils, TAFE, employer associations, unions etc. The advantages in adapting existing instruments include: saving time, learning from the experience of others, access to skill inventories, keeping to industry standards, reducing parochialism.

  Apart from general questionnaires, there are a few specific survey techniques such as Delphi, WPSS (Work Performance Survey System), CODAP (Comprehensive Occupational Data Analysis Programs) and OSDAS

(Occupational Data Analysis System). However, they are more useful for determining training needs at a macro level rather than within a single enterprise.

Questionnaire methods have a number of **strengths:**

- economical for collecting data from a large number of people in a short time;
- high level of confidentiality possible;
- well-designed questionnaires can be interpreted consistently by the respondents;
- reliability is enhanced if respondents have sufficient time to consider each item;
- answers can be coded for easy analysis.

But they also suffer from several **weaknesses:**

- unless all the employers are surveyed it is often difficult to determine every training need;
- questionnaires have relatively low response rates (e.g. less than 50%).;
- unsuitable for people with poor literacy skills;
- self-completion surveys may offer little help to respondents who have difficulty interpreting a question;
- closed questions may restrict responses;
- open-ended questions can be extremely difficult to code.

- Group process methods

Group processes are often the most cost-effective source of information about on-the-job training needs.

Examples of specific methods are: Nominal Group Technique, DACUM, Force Field Analysis and Search Conference. They are all based on the technique of brainstorming and contain two distinct processes:

* idea generation
* idea evaluation.

For most enterprises a group of five to eight participants will be sufficient to provide detailed information about the training needs of one occupation or closely related groups of occupations (e.g. electricians, electronics technicians and trade assistants). Obviously a small organisation may be able to use a smaller group, while a very large enterprise may need more. The group dynamic, however, is influenced by the group size and absolute limits of between three and twelve should be observed.

The main aim of using small group processes is to encourage by discussion and interaction the generation of the widest possible range of on-the-job training needs. Brainstorming works on the principle that you need a large **quantity** of ideas to get good **quality** ideas. Nevertheless, not all groups will spontaneously generate a free flow of ideas. Some members may be shy and reticent while others may dominate the conversation. For this reason it is essential to have a skilled **facilitator** to help all group members to contribute.

It takes considerable training and practice for a facilitator to develop the interpersonal skills necessary to achieve effective outcomes from group processes.

Because of this, it is preferable for a novice facilitator to start with one of the more **structured** processes such as the Nominal Group Technique. It is also useful for the facilitator to have the assistance of a scribe to record all contributions thus freeing the facilitator to concentrate group members' involvement.

The **strengths** of group processes are:

* fast (one hour or less for most techniques);
* creative (wild ideas are encouraged);
* good for identifying training needs in the affective (i.e. attitude) realm;
* inexpensive (in terms of ideas generated and time);
* participative (group members rather than facilitator have ownership of outcomes).

The **weaknesses** of group processes are:

* inconsistent results (i.e. two different groups considering the training needs of the one occupation in the same enterprise are unlikely to come up with identical results);
* results are largely determined by group members' knowledge;
* can be difficult to control.

Selection of methodology

While there is no one best method for determining on-the-job training needs in all enterprises, there are a number of **factors** to be considered when making a selection(s). Each factor can be expressed as a question to be considered before making a choice.

Factors to consider:

* **What is the scope of the TNA?** Is it concerned with just one occupation or one part of the enterprise, or with the entire workforce? Is the focus on skills, or knowledge, or attitudes or all three? If the scope is very wide and the enterprise large (say over 100 employees) then a questionnaire is probably indicated. If attitudes are considered important, then a group process should be considered.

* **What depth of information is required?** Is it necessary to know **every** training need or just the main ones? If detailed information is required, an inventory of skills, knowledge and attitudes should be generated by group processes and confirmed by interview or questionnaire.

* **How large is the workforce and how many different occupations need to be covered?** Not only does this have time and cost implications, but may include industrial considerations such as demarcation. In a diverse workforce involving a number of different unions (and possibly awards), it will almost certainly be necessary to set up some form of a joint union-management TNA steering committee to address these issues and decide on the method(s) to be used.

* **What is the industrial relations climate like?** Are there major grievances that are likely to affect the TNA? Are there participative decision-making structures in place? Will the method chosen allow for adequate consultation and input by the industrial parties?

Training needs are always high on the agenda of trade unions so it is essential from the outset to involve job delegates and full-time officials.

* **How much time and money are available for the study?** Short timelines and small budgets usually preclude large paper-based surveys. If should be stressed that sufficient time should always be allowed for **full and adequate consultation** between management and employees during the TNA.

* **How will the findings be received?** Will the industrial parties have ownership of the outcomes? Will they be implemented? If all parties are involved in the design and implementation of the TNA, then its outcomes have a much better chance of being widely accepted and implemented.

* **Are the necessary expertise and resources available?** Does the organisation have the people and resources (e.g. data processing) to conduct the TNA or will outside help be needed?

* **What information is already available?** There is not much sense in reinventing the wheel if much of the data is already available from sources like personnel and training records.

Training versus non training responses

TNAs invariably reveal far more than on-the-job training needs. Other outcomes may include:

* training needs that can only be met off-the-job
* need for job redesign
* simplifying the work method
* recruiting more trained employees
* review of awards and conditions
* need for better tools and equipment.

In most cases optimum human performance can only be achieved by a combination of training and non-training strategies. Nevertheless, on-the-job training has not always been the preferred option in many Australian enterprises.

The choice between training and non-training responses basically involves a decision about how organisational objectives are best met. In the past many of our enterprises have tended to opt for technological solutions, usually involving the purchase of expensive, imported capital equipment. With the exception of apprentices, on-the-job training has largely been restricted to training operators in very basic use of this technology. The results of TNAs, however, consistently show a desire by production workers to undergo training so that they can perform a much wider range of tasks on their equipment. For example, many press operators want to learn how to maintain, repair, and retool their machines rather than just load and unload them.

Employers who ignore the findings of TNAs do so at their peril. At the very least they are passing up an opportunity to

capitalise on the first-hand knowledge, goodwill and enthusiasm of their workers. At worst they will lose them to a more astute competitor.

Another non-training response favoured by many Australian employers has been to poach trained workers from other enterprises. This strategy is hardly sustainable in the long-term and has been roundly condemned by government, unions and those employers who have made a real investment in training their staff.

Immigration has always been a good source of skilled labour for Australia. But as our international economic performance slips, Australia is becoming a less attractive destination for those who are able to obtain high wages and an increasing standard of living in their own countries.

TNAs have revealed that the type of training that is required to redress many of the skill shortages in Australia need not be long or expensive. Indeed on-the-job training usually has a shorter lead time and is considerably less expensive than many capital-intensive alternatives. Not only does it offer these immediate advantages, it also increases the nation's stock of skills and its long-term economic competitiveness.

APPROACHES TO ON-THE-JOB TRAINING

How adults learn

Learning may be defined as a change in behaviour that can be observed and measured. It involves the acquisition of skills, knowledge and attitudes associated with job mastery.

It is often said that learning is a life-long process. Certainly there are concentrated periods like the time we spend at school, TAFE or on a short training program. But over a lifetime by far the greatest amount of skills, knowledge and attitudes are acquired in an informal way at home, at work and at play.

(Advertiser Newspapers)

Adults and children both acquire skills, knowledge and attitudes in similar ways. It begins with seeing, hearing, reading, smelling, tasting or feeling something for the first time. Following this initial introduction to a new skill, piece of knowledge or value, there is usually a try-out phase. In the case of a skill, this may mean attempting to do all or part of it. For a new item of knowledge or a value, this may mean comparing it with existing knowledge and values. Next comes the practice stage where we attempt to apply the skill, knowledge or attitude. This is often done under supervision or in a simulated environment. When we and our instructors are satisfied of our competence, real-world application can proceed. The more frequently we apply the skill, knowledge or attitude, the more we internalise it. It becomes second nature and often we use it without consciously thinking about it.

Learners feel more comfortable about their learning if they start with something they know before proceeding to the new. Obviously adults have some advantages over young people because of their larger stock of pre-existing knowledge. Children on the other hand are often more eager to explore the unknown and are not so hidebound by old habits and attitudes.

In a training situation it is important to keep in mind the **principles of adult learning**. They are:

> **Motivation:** adults learn more effectively if they understand why they need to know or be able to do something. They need to experience or see the benefits: 'what's in it for them'.

Trainee centred approach: adults have a strong need to be responsible for their own learning - to be self-directing. This means that the training should give the trainee scope to actively participate in the learning process.

Transfer of learning: the trainer must ensure that the skills learned in the training session can be applied on the job.

Prior experience: when training adults it is vital to recognise and make use of their prior learning experiences.

Recognition of prior learning

At present **recognition of prior learning (RPL)** is a burgeoning field. Prior learning is defined as:

> *skills and knowledge obtained through formal training (industry and education), work experience and/or life experience.* Brown (1990)

The main focus of RPL is the learning outcomes of the prior experience, not how, when or where the learning occurred. Questions of authenticity, currency, quality, relevance and transferability need to be resolved so that employees can gain credit towards formal qualifications or placement in the correct skill-related wage classification.

For training on the job RPL is also essential. Firstly we need to establish what the trainee already knows or can do so we know where to start. Next we can encourage the trainee to

build on their existing knowledge and skills by taking them from the known into the unknown. By relating the new to the old, we provide a point of reference for new learning. The trainee can compare the new and the old and modify their behaviour accordingly. If previous behaviour is inappropriate or dysfunctional, then it can be extinguished at an early stage to prevent bad habits setting in.

Literacy and numeracy

It is now widely accepted that the greatest barrier to skill formation in the Australian workforce is the lack of basic literacy and numeracy skills. While people from non-English speaking backgrounds tend to be more visible in this regard, by far the largest group affected are Australian-born workers.

The implications of this situation for on-the-job training are severe. For instance, how is it possible to provide effective safety training if an employee is unable to read hazard signs? Or how can quality and accuracy be assured if workers are unable to carry out basic measuring and arithmetic tasks?

To address this problem, a number of larger enterprises have entered into co-operative arrangements with TAFE colleges to provide training in literacy skills in the workplace. To date, however, there have been few initiatives to improve numeracy skills apart from components of formal training such as adult apprenticeships.

On- and off-the-job training

The relationship between **on- and off-the-job** training is another important consideration. There is growing recognition of the need to integrate these two components wherever possible. In-house trainers should be fully aware of the training provided to their employees by external agencies such as TAFE. Conversely the external providers need to 'get closer to their clients' and develop a clearer understanding of the needs of both the trainees and their employers.

If on- and off-the-job training are co-ordinated and complementary, then the trainee will be provided with a powerful learning experience. But to achieve this, there needs to be greater mutual recognition by in-house and external trainers of their counterparts' contribution. This joint approach would be enhanced if there were greater opportunities for in-house and external trainers to swap roles. If this were possible, it would have the benefit of exposing in-house trainers to a broader range of training strategies and giving external trainers greater insight into production processes and the real-world needs of their clients.

Action learning

Most adults prefer an action or hands-on approach to learning rather than a theoretical, or classroom-based style. According to Barry Smith (1989) **action learning** assumes that adults bring to the learning situation prior knowledge and skill, rather than a vacuum to be filled by an expert trainer. It also recognises the power of individual

experiential learning and links this to practical action. Action learning was developed in the UK by Prof. Reg Revans over 40 years ago and has been used successfully world-wide in a variety of enterprises. In Australia it is used in on-the-job training of employees at ICI, ACI and Commonwealth Government Departments. It is also slowly gaining acceptance in some university MBA programs.

Smith's (1989) Action Learning model is set out in Figure 2. The action component is the **inner cycle** and the learning component, the **outer cycle.**

Figure 2: Action Learning Model (Smith 1989)

In the context of on-the-job training, action learning focuses on human performance problems in the workplace. Trainees, their co-workers and trainers all interact to overcome these. The trainer's role is more of an adviser or coach rather than a teacher and the learning material is derived from the job, rather than from books or irrelevant case studies. Differences between action learning and more traditional approaches are illustrated in Figure 3.

Traditional Learning	Action Learning
Trainer centred	Trainee centred
Passive	Active
Individual orientation	Based on work group
Study other organisations	Study own organisation
Historic case studies	Current real cases
Programmed knowledge (PK)	PK plus questioning
Theory	Theory and practice
Input based	Output/results based
Past oriented	Present and future
Low risk	Higher risk

Figure 3: Traditional learning and action learning compared.

Although action learning was originally devised to assist management with problem-solving, it is equally useful for training employees at all levels within an organisation. Depending upon the trainees' level of experience and preferences, the most effective learning outcomes may be achieved using a blend of traditional and action learning approaches.

The principles of action learning can be applied with most of the common delivery modes for on-the-job training, including:

- one-to-one instruction
- small group instruction
- self-directed learning
- computer assisted instruction.

Obviously they are not compatible with very regimented 'chalk and talk' lectures or with simulation exercises that are not good approximations of real work.

While the trainer's role in action learning is low-key, preparation, planning and management of on-the-job training are still essential. The trainer may also need to develop new skills as a coach and mentor, rather than as a subject expert and lecturer. Crucial to the success of action learning is the ability for the trainee to pose searching questions and then find the answers. For this reason the trainer should avoid providing immediate answers to the trainee's questions. Rather, the trainer should help the trainee to formulate the right questions and guide the research required to find the answers.

Case Study 2: Northern Territory Police

The Northern Territory's school-based police community relations program provides a good example of action learning in on-the-job training. School-based police community relations is a proactive community development program which targets students throughout their school years. Its aim is to maintain and improve the relationship between police and the community.

Experienced police officers recruited into the program for a minimum of two years, are based at 18 secondary schools in major centres. They provide outreach services to the surrounding community, including four to six feeder primary schools.

A major part of this program, which is unique in Australia, is D.A.R.E.: Drug Abuse Resistance Education. Newly appointed school-based police officers undergo two and a half weeks of intensive D.A.R.E. training at the NT Police College. This training covers both content and presentation skills and includes practical experience in a school.

In their first year as a school-based police officer, personnel undergo continuous on-the-job training supervised by co-ordinators. The officers develop crucial interpersonal, communication and problem-solving skills as well as the special attitudes required to undertake this alternative approach to police work.

These are enhanced by a routine of referral, practice, reflection, revision and reapplication. When the program was initiated, school-based police attended fortnightly seminars to discuss their progress and share approaches to common problems. As their experience broadened, the frequency of these seminars was reduced to first monthly, and then quarterly.

Teleconferencing is used to allow officers based outside Darwin to participate in the seminars. In-service training is also provided to promote skills such as counselling and public speaking. At least once a year co-ordinators spend an extended amount of time (e.g. up to two days) with each school-based officer.

Examples of action learning situations for these officers include:

- teaching the D.A.R.E. program on a weekly basis;
- addressing School Council and Parents and Friends meetings;
- publicising Safety House and Neighbourhood Watch programs;
- liaising with local business people;
- conducting sport and recreation activities for students; and
- explaining citizens' rights to adult re-entry students.

The school-based police officers meet on a regular basis to review their progress and exchange information. Rather than adopting a single, uniform approach to problems, each officer is encouraged to develop their own personalised style.

For many officers this type of work is quite different from regular police work. It involves greater discretionary judgement with much more emphasis on crime prevention rather than detection.

In some cases it requires 'unfreezing' the approach gained by police officers in their initial police training and on-the-job experience.

In true action learning style, these school-based police combine theory and practice to confront real cases, focus on the future and take risks.

Trainer training

These approaches to on-the-job training strongly imply a need for **trainer training**. In the past, most in-house training has been delivered by workers with good subject knowledge and plenty of practical experience, but little or no formal training skills. Quite often the on-the-job trainer has a wide range of other responsibilities such as supervision, meeting production targets, safety, maintenance, record-keeping etc. But in order to maximise the effectiveness of on-the-job training, the trainer needs specific skills and knowledge. These include being able to:

* apply adult learning principles
* communicate effectively
* determine training needs
* set training objectives
* assess competencies
* evaluate training programs
* develop training materials
* liaise with external training agencies
* keep training records.

Competency standards for trainers are currently being developed for the National Training Board and should be available by mid-1991.

Since the implementation of the Training Guarantee legislation, trainer training has been marketed by a wide variety of providers. It is fair to say that the quality of these courses varies considerably. On the one hand, there are excellent programs provided by reputable providers such as Training Services Australia, TAFE, the Australian Institute of Management as well as some private agencies. On the other, there are many dubious claims being made: for example, any suggestion that a trainer can be fully trained from scratch in a two or three day course should be treated with considerable caution. Those seeking trainer training should shop around and take the advice of experienced trainers. The *National Training Directory* which lists 289 individual trainers, their categories of competence and relevant experience has recently been published by the Australian Institute of Training and Development and should provide a useful tool for those seeking training programs.

DELIVERING ON-THE-JOB TRAINING

In this section three aspects of on-the-job training delivery will be examined:

- preparation
- actual delivery and
- administration.

If your trainees are also receiving external training in similar skills (e.g. at a TAFE college), you should aim to integrate both off and on-the-job components.

Preparation

Once the needs have been determined and a decision has been made to meet these through on-the-job training, there is usually a considerable amount of preparation required before training can be effectively delivered. The first thing is to establish the training **objectives**.

The desired objectives or outcomes of on-the-job training will in most cases relate directly to the needs. Ideally these should be expressed in the form of a competency statement e.g.:

> *. . . at the end of this training the trainee will be able to type correspondence on a personal computer at 35 words per minute with 98% accuracy using Wordperfect V 5.1.*

Notice that the objective is quite specific and contains performance standards and conditions under which the

performance occurs. This information must be given **before** the training begins so that the trainee knows exactly what is expected.

Objectives expressed as competency statements may **imply** knowledge and attitudes as well as manual skills. But if these are crucial they should be stated explicitly e.g.:

> *. . . at the end of this training the trainee will be able move palletised loads weighing up to 3 tonnes using an LPG fork lift truck. He/she will know the maximum safe working loads for various height settings and the standard pallet stacking configurations as set out in the handbook. At all times the trainee will demonstrate a commitment to safe working practices by observing company and Department of Labour regulations.*

If your current on-the-job training objectives aren't written as competency statements, it may be a good idea to review them.

The next preparatory task is to select the training **method**. Often the choices will be obvious or limited. Nevertheless the trainer should look at all options and base the choice not just on short-term cost or expediency, but on what will give the best outcome. This means considering:

* safety
* adult learning principles
* the trainee's needs, preferences and prior experience
* the training environment (noise, distraction levels)
* training resources available.

Some of the possible options are:

* one-to-one instruction;
* group instruction;
* simulation exercises where trainees learn on the job by undertaking hypothetical tasks or by using simulators rather than real tools, materials and equipment;
* self-instruction where trainees follow prepared guidelines which might be presented in the form of job sheets, manuals, audio-visual media or interactively via a computer terminal;
* action learning where the focus is on solving a problem by collaborating with co-workers;
* work shadowing where trainees follow an experienced worker and carefully observe their practices, or
* some combination of these.

Irrespective of the method used, it is highly desirable to do a **job or task breakdown**. Assuming that you are familiar with the job or task, this simply means breaking it down into logical **steps and key points**. A logical step may involve the application of one skill or piece of knowledge. It will usually have a distinct beginning and end and will often be characterised by the use of a specific tool, machine or raw material. Key points to be taken into account include **any safety items** or pieces of information that **affect quality or help make the job/task easier**.

(Advertiser Newspapers)

For example, teaching someone to drive an automatic car:

Steps:		**Key point:**
1.	Correct seating position	Safety belts, mirrors, pedals
2.	Start engine	Select neutral, handbrake on
3.	Move off	Select drive, handbrake off, check road, accelerate slowly
4.	Steering	Keep left, mirrors, indicators
5.	Speed	Below 60kph
6.	Braking	Keep safe separation distance, gradual pedal pressure
7.	Stopping	30 cm from kerb, select park, handbrake on.

These are such familiar skills for most drivers that few would actually make a mental note of these steps and key points as they do them. Yet if we are teaching a novice, we would want to be sure to miss none out. For this reason job and task breakdowns are important. Sometimes the very experienced trainer being so familiar with a task forgets to teach a vital step!

Other preparatory tasks for on-the-job include:

* informing the trainees and their supervisors
* arranging a suitable time and place
* getting any training materials prepared.

Giving the training

There are **four basics steps** to follow when giving on-the-job training:

* Prepare the trainee(s)
* Present the training
* Try-out and practice
* Application and assessment.

Prepare the trainee(s):

* Because adult learners tend to be apprehensive, it is important to **put them at ease**. In a group situation it may also be appropriate to introduce each member.

* State the training objective(s), preferably in competency terms.

- Find out what the trainee(s) already knows.

- Get them interested in the training by explaining the benefits in terms of 'what's in it' for them.

- Place them in an appropriate position: i.e. where they can see and hear.

Present the training:

- Explain the context of the training objective i.e. where it fits into the bigger picture.

- If it is an observable skill or behaviour, model it at normal speed/timing.

- Repeat it step-by-step, stressing **key points.**

- Get the trainee(s) to try or explain each step, stating the key points.

- Get them to repeat each step until mastered.

- Put the steps together in the normal sequence.

Try-out and practice:

- Set the trainees some real work to practise, but perhaps with a reduced rate of output.

- Supervise the practice as unobtrusively as safety/quality permits.

- Correct errors as soon as they are observed and ask trainee(s) to explain the nature of the mistake.

- Continue the practice until YOU know THEY know.

Application and assessment:

- Test each trainee to determine that they have acquired the skill, knowledge or attitude.

- Set them to work under normal conditions, but check frequently at first.

- Ensure that they know who to go to for help.

- Follow up and retest as required.

If the trainees are on a self-instruction training program, e.g. receiving the information from a written or audio-visual source, then the above steps will be slightly modified. For instance, it may be necessary to provide closer supervision during the try-out phase.

Administering on-the-job-training

Although the Training Guarantee legislation has recently highlighted the need for larger organisations to record details about employee training, sound reasons for doing so have always existed. Some of these include:

- developing a skills inventory or bank (not unlike an inventory of stock or equipment) so you know exactly what human resources you have;

- recording time and money spent on training to ensure its cost-effectiveness as well as for budgeting purposes;

- recording skills and qualifications for pay and classification purposes;

- accreditation and certification purposes;

- using the data for succession planning and career development;

- modifying and updating training programs;

- statutory requirements, i.e. where certain training and retraining is prescribed e.g. airline pilots, firefighters, medical practitioners.

Specific administrative requirements of the Training Guarantee apply to all employers carrying on business in Australia except:

- those with an annual payroll below $200,000 in 1990-91
- public benevolent institutions other than hospitals
- religious institutions,
- certain exempt international organisations (e.g. diplomatic missions).

Employers outlaying less than 1% (1.5% from 1 July 1992) of their annual payroll on **eligible training expenditure** will be obliged to pay the shortfall to the Australian Taxation Office. Eligible training expenditure includes both on- and

off-the-job training. To qualify as an eligible training program:

- its objectives must be to develop, maintain or improve **employment related skills**;
- there must be no other significant objective, such as recreation; and
- the program must be structured **before** it is delivered.

Thus on-the-job training is eligible as long as employers identify before the start:

- the skills, knowledge and competencies to be acquired;
- how these skills, knowledge and competencies will be imparted; and
- the expected results or how productivity gains could be identified.

Also, the training must have been **designed or approved** by someone appropriately qualified.

Because employers are required to **self assess** their liability, it will be necessary for them to **keep records** unless they choose to pay the levy in full. These records must include:

- the annual company payroll;
- net eligible training expenditure;

- liability (if any) of the training shortfall;
- who designed or approved the training program together with their qualifications or experience;
- the skills, knowledge or competencies to be acquired by the participants that were identified before the training began;
- the means by which the training was imparted; and
- what were the expected outcomes or the means of identifying productivity gains.

These records can be examined by the Tax Office and must be kept for five years. There are penalties for failure to keep accurate records.

Further information is contained in a Tax Office publication titled: *The Training Guarantee - Your Questions Answered.*

(News Ltd)

Case Study 3: Sheraton Darwin

The Sheraton Hotel in Darwin is a 233 room, five star hotel which opened in 1986 and currently has about 200 employees. Five main categories of training are conducted in-house:

- customer service training
- on-the-job skills training
- management training
- safety and security training
- organisational development.

A training business plan is administered by the Director of Human Resources. The plan includes mandatory courses which are prescribed for all Sheraton Hotels and optional courses which vary according to local needs.

Customer service training

Every employee undertakes this program which is known as the **Sheraton Guest Satisfaction System (SGSS).** The program was developed in the early 1980s for world-wide use in Sheraton Hotels. SGSS contains four 1.5 hour modules, each of which covers a particular standard relating to client contact e.g.: greetings and courtesy.

The modules are normally delivered as part of the orientation program for new employees by specially trained trainers. Training methods involve a combination of video presentations, discussions, role plays and questionnaires. Ideally each new employee should attain the four required customer contact standards before dealing with members of the public.

The effectiveness of the SGSS is assessed by a standard measure known as the **Guest Service Index (GSI).** This is a questionnaire which guests are encouraged to complete. Results are sent to a central collection point in Boston for analysis and reporting back to individual hotels.

Results of the GSI are used as part of an award and incentive scheme known as the **Chairman's Club.** Annual and quarterly awards are made to high performing hotels and individual employees.

On-the-job skill training

This covers topics such as wine appreciation, bed making, guest check-in and reservation procedures. For each job at the Sheraton Darwin there are specified competency standards. Training and testing is undertaken by managers and supervisors who have undergone trainer training.

Management training

This covers training for line managers in skills such as performance appraisal, leadership, administrative procedures and trainer training. It is mainly provided by senior managers and staff trainers.

Safety and security training

International corporate standards for this type of training are set in Boston and adapted by each hotel to meet local legislation and regulations. At the Sheraton Darwin safety and security training is co-ordinated by the Human Resources and Security departments. Formal instruction in fire drills and first aid is given to employees. On-the job training in chemical handling, maintaining hygiene standards and safe lifting procedures is delivered by department managers and supervisors.

Organisational development

Some of the programs such as **Focus Groups** (which examine barriers to high performance) involve all employees. Other training such as team development and **Total Quality Control** may only apply to selected employees (e.g. senior management) or specific departments. Training to facilitate organisational development may be presented either by Sheraton staff or external consultants.

Comments

Although the Sheraton Darwin is one of the smaller hotels in the Sheraton chain, it is required to maintain the quality of its in-house training to strict international standards. The Sheraton Darwin does not report particular difficulty in meeting these standards.

EVALUATION OF ON-THE-JOB TRAINING

There are two main reasons why you should always evaluate on-the-job training:

* to ensure that the training meets the trainees' expectations, and

* to determine whether the training can be improved in some way.

Evaluation methods generally fall into two categories: **formative** (during the training) and **summative** (at the end of the training).

Formative evaluation of on-the-job training may occur when either the trainer requests feedback about the training or when the trainee provides it spontaneously. Trainers should actively encourage constructive criticism at all times. When evaluation is delayed until the end of a long training program, the feedback may not be so effective. If the training fails to live up to the trainees' expectations, it is much more useful to the overall training program if this is detected and corrected sooner rather than later.

The method of summative or terminal evaluation is more familiar to most people. It is chiefly conducted in some form of a course/trainer checklist or rating scale at the end of a training program.

Both summative and formative evaluation methods have their supporters and detractors. In the move towards competency-based, self-paced training however, the use of a

combination of summative and formative evaluation methods is certain to grow.

Although adult trainees, especially in a group, are usually quick to indicate if your training is deficient, it is probably best not to rely entirely on them being 'up front'. The trainer should make it clear from the outset of a training program that feedback is always welcome. Even if you think a trainee is wrong, you should accept their comments with candour and be prepared to discuss the matter.

At suitable points during, and certainly at the end of a training course, the trainer should ask the trainees to complete a formal evaluation of the training. Unfortunately many of the course evaluation questionnaires offered to the author have been inadequate and self-serving. Group discussion methods (e.g. Nominal Group Technique) are often far more effective in eliciting feedback, even if they take a little longer to conduct.

A few formal trainer evaluation instruments such as Likert Scales, Thematic Apperception Tests (TAT) and the Osgood Semantic Differential exist. For many on-the-job trainers these will be too esoteric. However, more detailed treatment of these tools can be found in Stock, Laird and Likert. An academic library will help you to locate them.

Most practical trainers should have little difficulty obtaining useful feedback from their trainees. At the very least, your trainees should be given the chance to let you know whether they believe the training objectives were met and any changes they believed desirable.

Quite often a short, anonymous survey combining open and closed questions and a simple (i.e. no more than 5 point) rating scale can obtain useful feedback from trainees. For example, most trainers would probably appreciate answers to the following questions:

1.	Did the training meet its **stated objective**? YES / NO / UNSURE (If there are multiple objectives, each should be listed separately.)
2.	Did the training meet **your needs**? FULLY / PARTLY / NOT AT ALL
3.	What was the **most useful** part of the training? ....
	4. What was the **least useful** part of the training? ....
	5. What **changes** would you make to the training? ....
6.	How will you **use** what you have learned in your job? ....

These questions could also be used as the basis for group evaluation and discussion of the training.

FURTHER READING

Australian Institute of Training and Development. (1991). ***National training directory.*** AITD, Sydney.

This directory was published with the aim of ensuring ethical and high quality training standards across Australia. It lists alphabetically 298 individual trainers, cross referenced by four major areas of training and development expertise and six further categories of competence. Other information provided on each trainer includes relevant experience, qualifications, recent assignments, availability and contact details. The introduction to the directory gives intending consumers a definition of training and a check-list to be used when selecting trainers.

Australian Taxation Office (1990). ***The Training Guarantee - your questions answered.*** Commonwealth of Australia, Canberra.

This offers a basic guide to the Training Guarantee legislation and is current as at 1 July 1990. It covers the purpose of the legislation and defines who is an employer, what constitutes an eligible training program and what is a Registered Industry Training Agent. It provides details and gives examples of how to structure eligible on- and off-the-job training programs. Brief information is given about the records that employers should keep, how to assess the levy, penalties and review and appeal procedures.

Brown, A. (1990). 'The recognition of prior learning' in *Assessment and standards in vocational education and training 1990 conference/workshop report.* TAFE National Centre for Research and Development, Adelaide, p.120-130.

This paper examines the following:

* the context in which prior learning assessment is developing
* principles and process in RPL
* international developments in RPL, and
* implications and issues resulting from research and case study work.

Clark, T.W. (1990). *Getting to grips with skills audits*. TAFE National Centre for Research and Development, Adelaide.

Skills audits are the processes whereby the skills required and held by the workforce are identified. They help enterprises and industries to identify the complete range of skills at their disposal and isolate deficiencies in the skills required. This booklet explains what skills audits are, setting them in the wider context of industry and award restructuring. It also looks at when to use and who should undertake skills audits. Four case studies are described and the implementation of the outcomes of a skills audit discussed. An annotated bibliography is included.

Dawkins, J. S. (1988). ***Industry training in Australia: the need for change.*** Department of Employment, Education and Training, Canberra.

This document is a discussion paper which canvasses issues and options to provide a basis for wide-ranging consultation. The paper states that persistent skill shortages exist across a range of industries and occupations. Current training activity by employers is uneven, ranging from best practice to no training at all. Recent Government reforms have been designed to improve the quality of the training system by reforms to the apprenticeship system, advisory mechanisms and TAFE, as well as the introduction of the Australian Traineeship System. The chapter headings are in the form of questions, inviting reader response.

Department of Industrial Relations (1989). ***On-the-job training: a handbook for training in the workplace.*** Australian Government Publishing Service, Canberra.

This handbook was developed to assist Australian Public Service staff to undertake on-the-job training and to provide information and techniques on how to impart knowledge and skills in a normal working environment. It adopts a generic, adult learning approach which is not task-specific.

The main topics covered include:

* why and how people learn
* task breakdown and analysis
* adapting a training program for on-the-job delivery
* assessing training effectiveness, and
* preparing a problem-solving form.

Field, L. (1990). *Skilling Australia: a handbook for trainers and TAFE Teachers.* Longman Cheshire, Melbourne.

Skilling Australia deals with the main aspects of planning, conducting and assessing job-related skills. It is divided into two parts. Part One examines Australia's current skills shortage and the link between economic performance, training and work organisation. Part Two covers the main competencies required by trainers and TAFE teachers if they are to successfully cope with these challenges. The book is extremely readable and provides a comprehensive introduction to the main influences on skill formation in Australia.

Foyster, J. (1990). *Getting to grips with competency-based training and assessment.* TAFE National Centre for Research and Development, Adelaide.

This booklet is intended to introduce the reader to the ideas associated with competency-based training. It explores the meaning of competence and explains what is involved in competency-based teaching and learning. The need for assessment and ways of going about it are discussed, as well as the implications of competency-based training for employers, teachers and learners. A short test for the reader appears at the end of the booklet.

Hall, W.C. (1990). 'Summary and challenges' in *Assessment and standards in vocational education and training 1990 conference/workshop report*. TAFE National Centre for Research and Development, Adelaide.

This paper summarises the document themes presented in the plenary sessions of the Assessment and Standards in Vocational Education and Training Conference conducted by the TAFE National Centre in 1990. Dr. Hall in his summing up focuses on the current context of training issues, assessment and standards in vocational education and the challenge relating to vocational education identified within the conference.

Hayes, M. (1990). 'Conducting skills audits' in *Training and development in Australia*.

This article defines more clearly some of the key terminologies (e.g. skill, competency and performance) associated with skills audits and training needs analyses.

Hayton G., et al (1988). *Training for Australian industry: a guide to research techniques for assessing industry training requirements*. Australian Government Publishing Service, Canberra.

This manual is principally concerned with the development of methods aimed to identify industry and occupational skill requirements as a basis for developing appropriate training responses. It describes methods of industry analyses, labour market analyses, occupational analyses and training needs

analyses. It also presents a general approach to planning, conducting and reporting workforce studies.

Hayton G., et al (1989). ***Training needs analysis.*** Australian Government Publishing Service, Canberra.

This monograph focuses on methods for conducting training needs analyses and is an extract from the previous title.

Hayton, G. (1990). ***Getting to grips with industry restructuring.*** TAFE National Centre for Research and Development, Adelaide.

The author provides the reader with an understanding of industry restructuring by answering three key questions:

* What is industry restructuring?
* Why restructure?
* How is industry restructuring achieved?

This booklet contains five case studies plus an annotated bibliography.

Kirby, P. (1990). 'Issues affecting assessment and accreditation' in *Assessment and standards in vocational education and training 1990 conference/workshop report.* TAFE National Centre for Research and Development, Adelaide.

This paper looks at the assessment and accreditation issues

confronting training providers and industry in the context of industry restructuring. These include:

* assessment of skills gained on the job through experience;
* assessment of prior study/training;
* credit transfer in the post-secondary education sector;
* responsibility for maintaining standards; and,
* power to award and accredit.

Kirby stresses the importance of focussing on client needs and argues that many of the reforms developed by TAFE systems should be implemented as a matter of urgency.

Laird, D. (1985). ***Approaches to training and development.*** **2nd ed.** Addison-Wesley, Reading, MA.

This is a very comprehensive treatment of organisational training and development. Some of the more pertinent chapters are:

* How do you find training needs?
* How do you respond to individual training needs?
* How do people learn?
* What methods shall we use?
* How can we measure training and development?
* How DO you evaluate training and development?

Mageean, P. (1988). *The integration of on- and off-the-job training in traineeships.* TAFE National Centre for Research and Development, Adelaide.

This study was commissioned by the Department of Employment, Education and Training (DEET) and was undertaken by the TAFE National Centre for Research and Development. The aim was to discover the key means by which the integration of on- and off-the-job training in traineeships can best be facilitated. Successful examples from similar systems, including apprenticeships and overseas systems, were examined to find these factors.

Mager, R.F., Pipe, P. (1984). *Analysing performance problems.* 2nd ed. Lake Publishing Company, Belmont, CA.

This book describes a step-by-step procedure for analysing job performance problems. A wide range of possible training and non-training solutions is suggested with frequent illustrations being offered throughout the text.

National Board of Employment, Education and Training. (1989). *Industry training in Australia: the need for change.*

Interim report on consultations by the Employment and Skills Formation Council, Australian Government Publishing Service, Canberra.

This report is based on the 241 responses to John Dawkin's 1988 discussion paper of the same name. Its chapter

headings are:

1. Introduction
2. Industry training in Australia: the context
3. Training reform: the debate and recent developments
4. Training reform: the next steps
5. Conclusion

Plus Attachments A - F.

Chapter Four and Attachment F are most useful as they cover strategies for improving the quality and responsiveness of training.

National Training Board. (1990). ***Setting national skill standards: a discussion paper***. NTB Ltd., Canberra.

This paper is designed to establish the framework and guidelines for use by those responsible for the development and implementation of standards-based training.

Office of the Australian National Training Series (1991). ***One to one skills instruction***. O.A.N.T.S., Hawthorn.

This new trainer-training package was developed to meet the specific needs of people involved in one-to-one skills instruction. It may be purchased from the publisher or their local agents on the basis of a site licence fee.

Pedler, M. (ed) (1983). ***Action learning in practice.*** Gower, Aldershot, Eng.

This book explains the underlying concepts, and outlines what is involved in implementing an action learning program. It offers a practical approach while recognising the intellectual, emotional and moral challenge of the action learning approach.

Smith, B. (1989) 'Management education: putting learning into action' in *Personnel today*. August 1989.

In this article the writer compares traditional and action-learning approaches and argues that the latter has much to offer Australian enterprises in the context of industry restructuring.

Snider, J.G. & Osgood, C.E. (1969). ***Semantic differential technique: a sourcebook.*** Aldine Publishing Company, Chicago.

The semantic differential technique forms an important role in most behavioural sciences and in several applied areas. This sourcebook is a compilation of materials that illustrate the origins, history, criticism, methodology, validity and uses of the technique. An extensive bibliography is also provided.

Stock, J., et al (1987). *Assessment and evaluation in training, Vol. 6 training technology programme.* Parthenon, Casterton Hall, Eng.

This is one volume in a series of thirteen manuals that deal with training technology. It covers in great detail the definitions, methods, processes, instruments and outcomes of both assessment and evaluation. Its style makes for easy comprehension and the content includes flow charts, cartoons and case studies.

Thomson, P. & Pearce, P. (1990). *Testing times: a study of assessment on and off the job.* TAFE National Centre for Research and Development, Adelaide.

The development of competence assessment covering both on-the-job and off-the-job training requires fundamental changes to the way educators and trainers have traditionally done things. This report seeks to document how much progress has been made in the area of assessment, both on-the-job and off-th-job, and how much still remains to be achieved.

The report concludes with three major recommendations for action:

* to raise the assessment skills of both teachers and supervisors
* specify a greater role for industry in assessing on-the-job training, and
* increase the quality of the assessment procedures.

Timsitt, G. & Chalmers, M. (1990). ***Training Guarantee handbook.*** CCH, Melbourne.

This is a largely non-legalist analysis of the Training Guarantee legislation and its implications. It goes into greater depth than the Australian Taxation Office's guide and has a chapter entitled *Designing your own training programs*. The final chapter contains further references and advice on where to obtain professional training advice. The authors go further than an objective analysis of the legislation by making a well-argued case for training and development in terms of its potential benefits.